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(56) Documents Cited

US 6206538 A

US 6168287 A

US 4078869 A

(58) Field of Search

UK CL (Edition S) B3C, B3N

INT CL⁷ B25B, B25F

Online: WPI, EPODOC, PAJ

(54) Abstract Title

Illuminated tool

(57) An electric-powered tool includes a handle 100 for receiving batteries herein and a barrel with a driving shaft 13 rotatably connected to the distal end of the barrel portion. The driving shaft is controlled by a switch 12 which is electrically connected between the batteries and the driving shaft. An illuminating device includes two bulbs 21 attached beside the driving shaft and the bulbs are electrically connected to the switch so that when turning on the switch, the bulbs light to illuminate the object to be worked with. A switch operated by button 300 can disconnect the illuminating device.

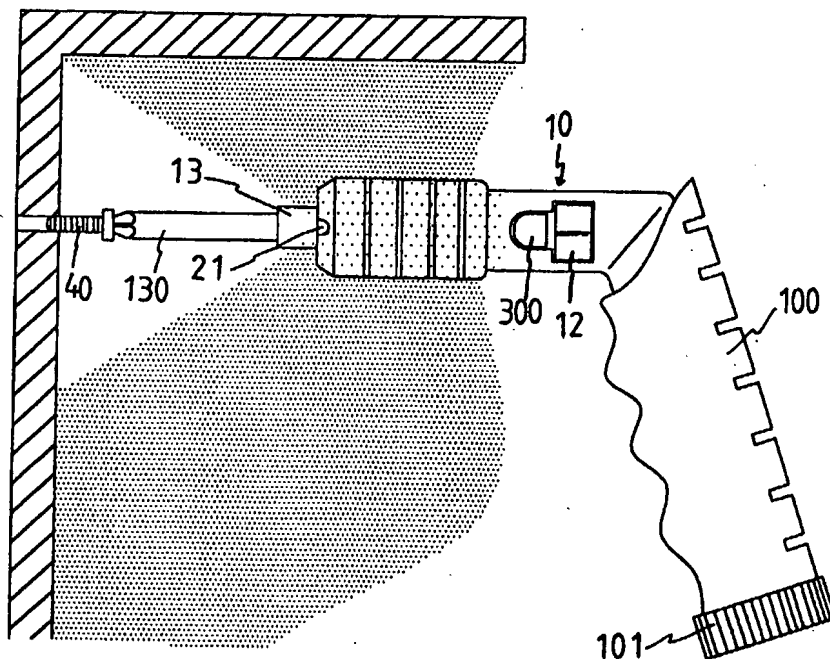


FIG. 2

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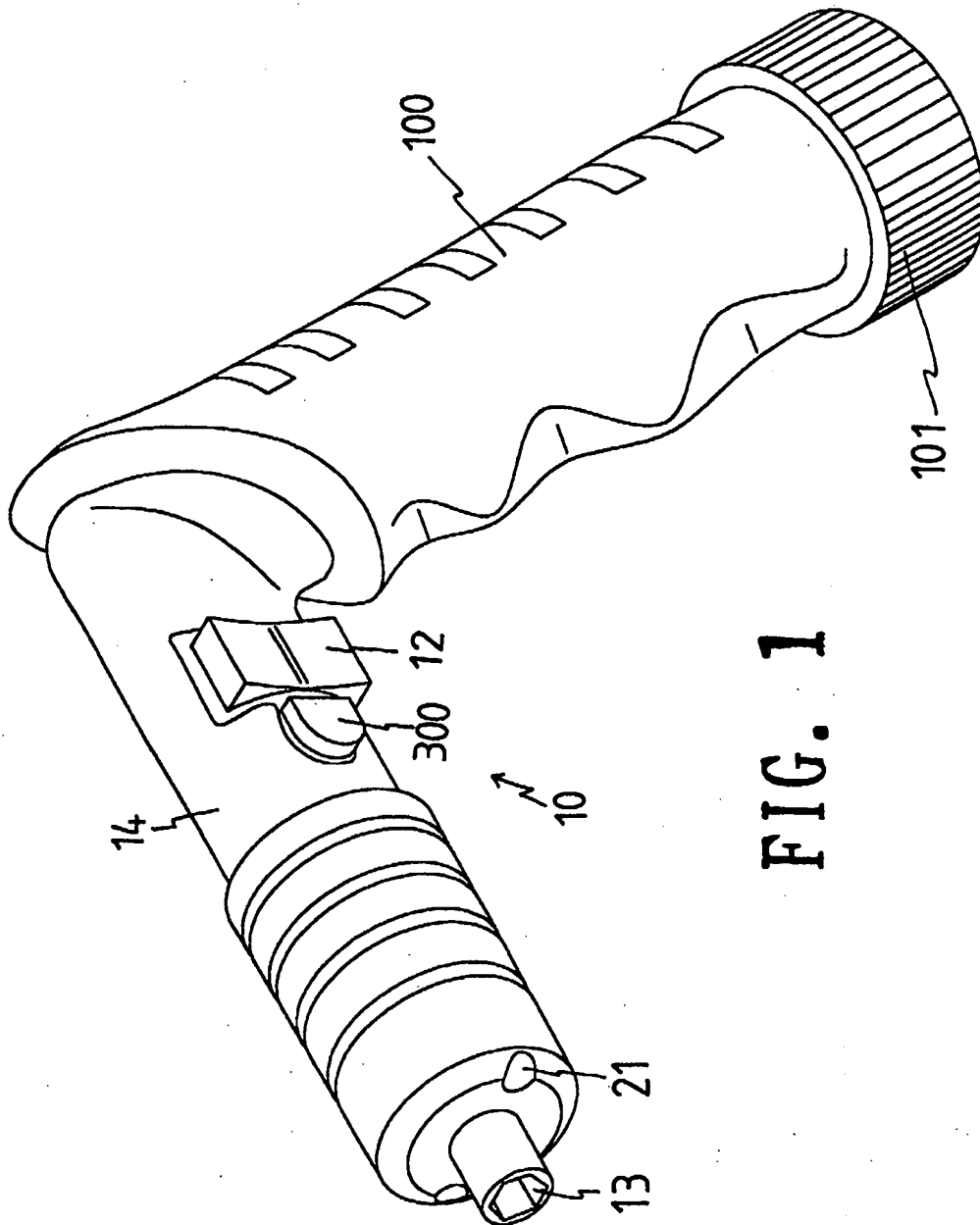
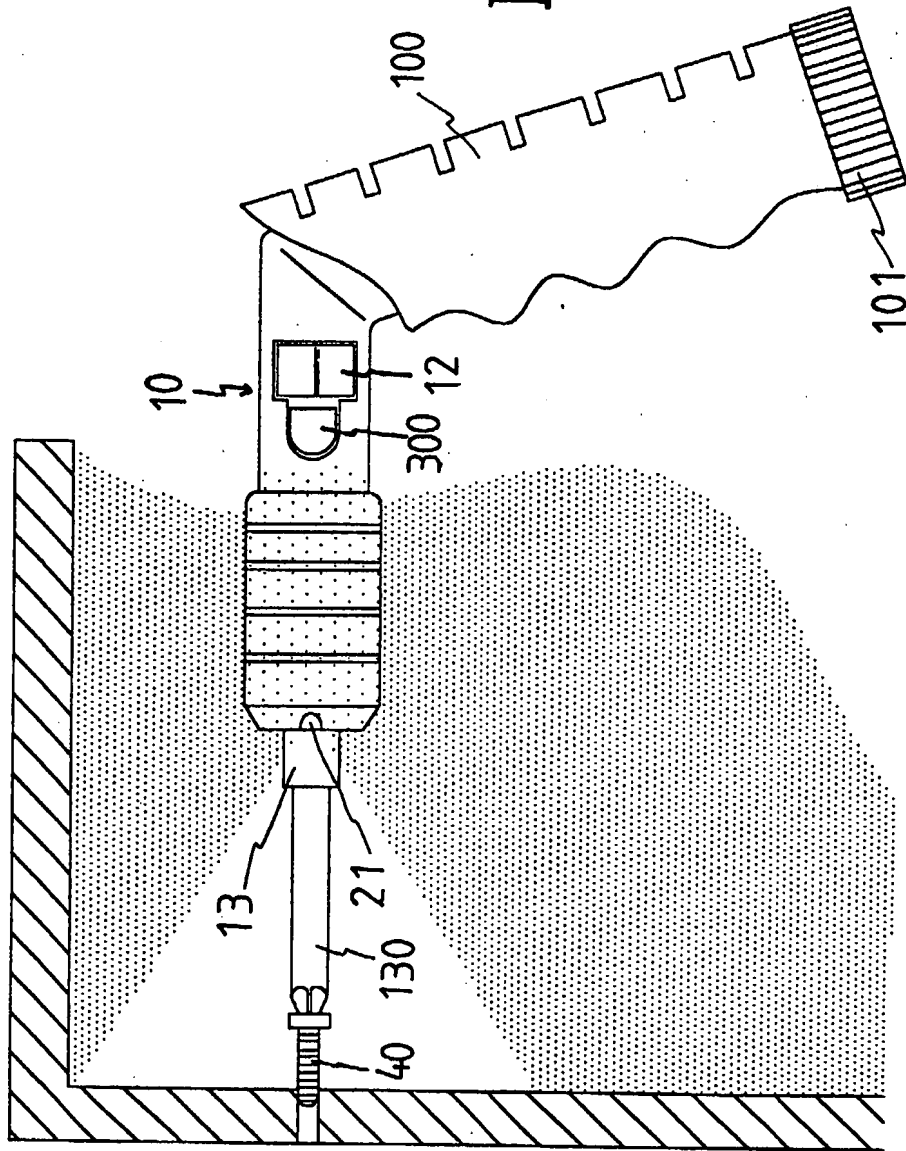


FIG. 1

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FIG. 2



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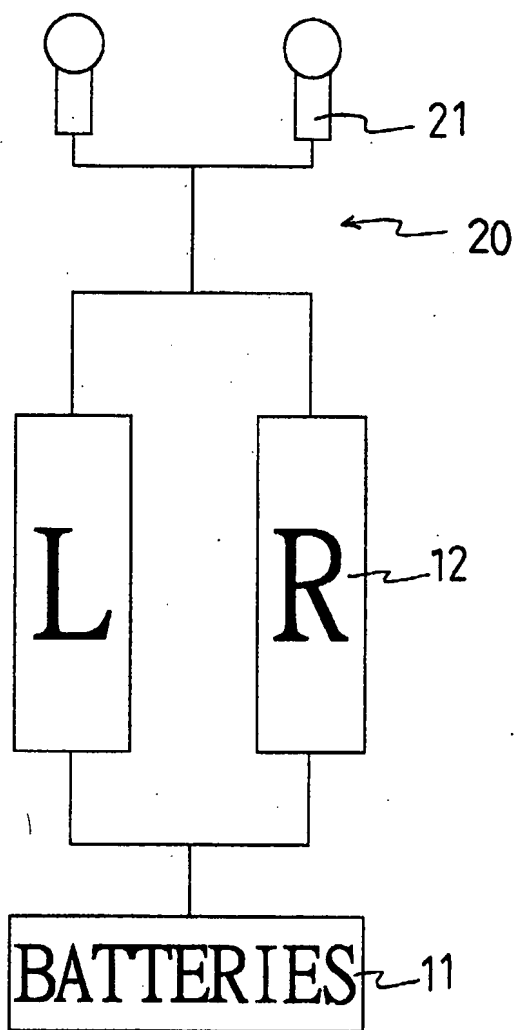


FIG. 3

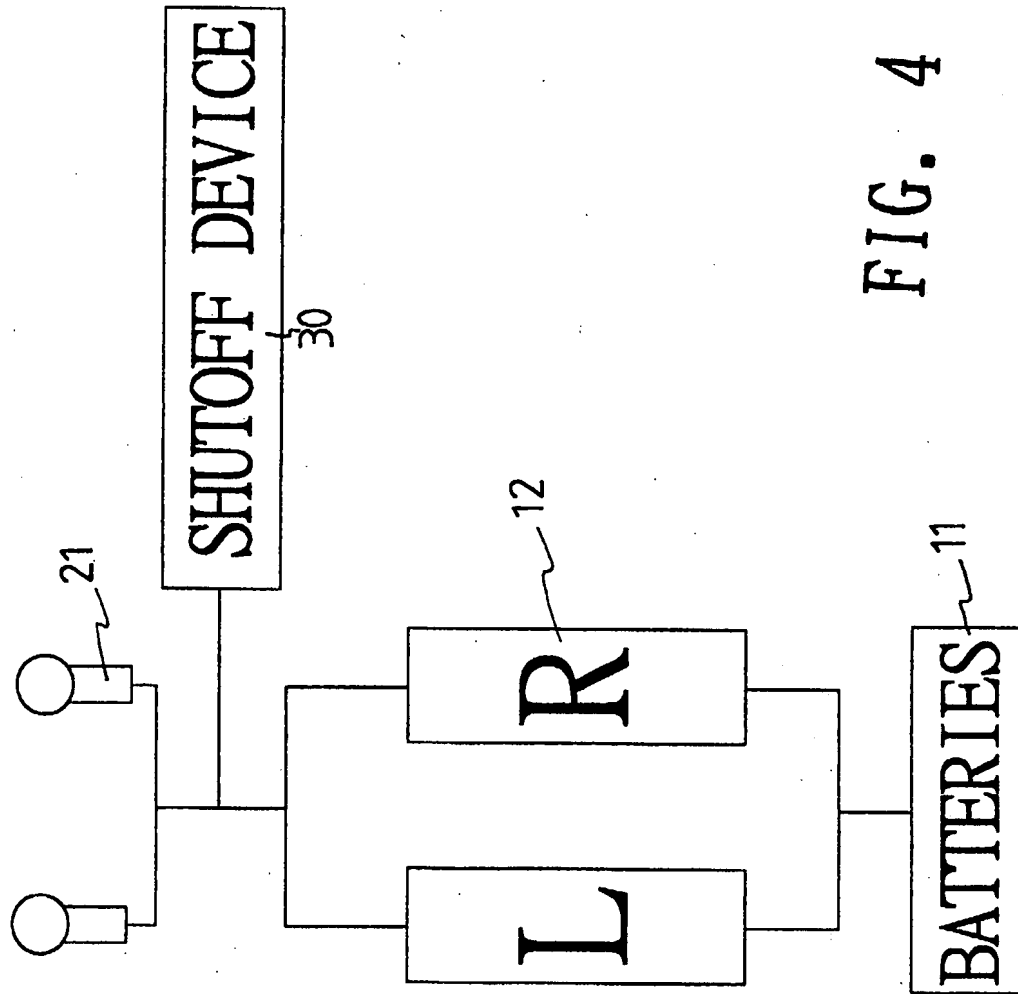


FIG. 4

1 **COMBINATION OF AN ELECTRIC-POWERED TOOL AND AN**
2 **ILLUMINATING DEVICE RECEIVED IN THE TOOL**
3 **FIELD OF THE INVENTION**

4 The present invention relates to an electric-powered tool and an
5 illuminating device received in the tool, and more particularly, to an electric-
6 powered tool having two illuminating members connected beside the driving shaft
7 and the illuminating members are controlled by a switch attached to the body of the
8 tool.

9 **BACKGROUND OF THE INVENTION**

10 Many conventional electric-powered tools are designed to improve their
11 functions or features to perform quickly or powerfully. One of the advantages of the
12 electric-powered tool is that the electric-power makes the work to be easily
13 completed so that any user can use the tool without troubles. However, although
14 most of the electric-powered tools have a great feature to powerfully drill a hole or
15 hammer a nail, they do not equipped with an illuminating device to provide
16 sufficient light on the object. In other words, if the user wants to work in a dark area,
17 he/she has to carry with a flashlight and uses one hand to hold the tool and the other
18 hand to hold the flashlight. This more or less limits the user to handle the tool and
19 could reduce the concentration of his/her mind on the object.

20 The present invention intends to provide an electric-powered tool having
21 an illuminating device which can be turned on together with the driving shaft so that
22 when using the tool, the user simply turns on the switch of the tool, the object is
23 illuminated so that it is convenience for the user to deal with the object by the
24 electric-powered tool. It is believed that the combination of the electric-powered tool
25 and the illuminating device may resolve the shortcomings of the conventional
26 electric-powered tool.

27 **SUMMARY OF THE INVENTION**

1 In accordance with one aspect of the present invention, there is provided an
2 combination of an electric-powered tool and an illuminating device. The electric-
3 powered tool comprises a handle for receiving batteries therein and a barrel portion
4 extending laterally from the handle. A driving shaft rotatably extends from the distal
5 end of the barrel portion and controlled by a switch connected to the barrel portion.
6 The switch is electrically connected to the driving shaft and the batteries. The
7 illuminating device comprises two bulbs attached beside the driving shaft and are
8 electrically connected to the switch.

9 It is an object of the present invention to provide an electric-powered tool
10 having an illuminating device which illuminates the object when turning on the
11 electric-powered tool.

12 These and further objects, features and advantages of the present invention
13 will become more obvious from the following description when taken in connection
14 with the accompanying drawings which show, for purposes of illustration only,
15 several embodiments in accordance with the present invention.

16 **BRIEF DESCRIPTION OF THE DRAWINGS**

17 Fig. 1 is a perspective view of the electric-powered tool with the
18 illuminating device in accordance with the present invention;

19 Fig. 2 is an illustrative view to show the illuminating device illuminating
20 the object when using the tool of the present invention;

21 Fig. 3 is an illustrative diagram to show the arrangement of the batteries,
22 the switch and the bulbs of the illuminating device, and

23 Fig. 4 is an illustrative diagram to show another embodiment of the
24 arrangement of the batteries, the switch, the bulbs and a shutoff device of the
25 illuminating device.

26 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

1 Referring to Figs. 1 to 3, the electric-powered tool (10) in accordance with
2 the present invention comprises a handle (100) and a barrel portion (14) extending
3 laterally from the handle (100) in which batteries (11) is received and a cap (101) is
4 connected to the lower end of the handle (100) so as to prevent the batteries (11) from
5 dropping from the handle (100). A driving shaft (13) rotatably extends from the
6 distal end of the barrel portion (14) and a switch (12) is connected to the barrel
7 portion (14). The switch (12) is electrically connected to the driving shaft (13) and
8 the batteries (11) so that the driving shaft (13) is actuated to rotate by operating the
9 switch (12). The switch (12) includes an L portion to let the driving shaft (13) rotate
10 counter clockwise and an R portion to let the driving shaft (13) rotate clockwise.

11 The illuminating device (20) comprises two bulbs (21) attached beside the
12 driving shaft (13) and electrically connected to the switch (12) so that when turning
13 on the switch (12) the bulbs (21) illuminate the object such as a bolt (40) which can
14 be rotated by a screwdriver bit (130) engaged with the driving shaft (13).

15 Referring to Fig. 4, a shutoff device (30) is connected between the switch
16 (12) and the bulbs (21), and the shutoff device (30) is controlled by a button (300)
17 attached to the barrel portion (14). Therefore, the shutoff device (30) can be turned
18 on independently from the switch (12) so that the bulbs (21) will not be turned on
19 while the driving shaft (13) is rotated.

20 The tool in accordance with the present invention provides a convenient
21 advantage for the users to work in a dark area and only one hand can handle the tool
22 (10) and the illuminating device (20).

23 While we have shown and described various embodiments in accordance
24 with the present invention, it should be clear to those skilled in the art that further
25 embodiments may be made without departing from the scope and spirit of the
26 present invention.

WHAT IS CLAIMED IS:

1
2 1. A combination of an electric-powered tool (10) and an illuminating
3 device (20), said electric-powered tool (10) comprising a handle (100) and a barrel
4 portion (14) extending laterally from said handle (100) in which at least one battery
5 (11) is received, a driving shaft (13) rotatably extending from the distal end of said
6 barrel portion (14), a switch (12) connected to said barrel portion (14) and
7 electrically connected to said driving shaft (13) and said at least one battery (11) so
8 that said driving shaft (13) is actuated to rotate by operating said switch (12), and

9 said illuminating device (20) comprising two bulbs (21) attached beside
10 said driving shaft (13) and electrically connected to said switch (12).

11 2. The combination as claimed in claim 1 further comprising a shutoff
12 device (30) connected between said switch (12) and said bulbs (21).

13 3. The combination as claimed in claim 2, wherein said shutoff device (30)
14 is controlled by a button (300) attached to said barrel portion (14).

4. The combination of an electrically-powered tool and an
illuminating device received in the tool substantially as hereinbefore
described and as shown in the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 0111890.0
Claims searched: 1-4

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Examiner: Dave Butters
Date of search: 29 October 2001

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.S): B3C, B3N

Int CI (Ed.7): B25B, B25F

Other: Online: WPI, EPODOC, PAJ

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US 6206538 A (LEMOINE) whole document	1-3
X	US 6168287 A (LIU) " "	1-4
X	US 4078869 A (HONEYCUTT) " "	1

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.